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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,180	10/23/2001	Jerome Tjia	SG 010008	9013

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EXAMINER

HUYNH, KIM T

ART UNIT	PAPER NUMBER
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2112

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/040,180

Applicant(s)

TJIA, JEROME

Examiner

Kim T. Huynh

Art Unit

2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. (WO) SG 01/00162, filed on Aug.10, 2001.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Chung et al. (US Patent 5,931,936)

As per claim 1, Chung discloses a bus system comprising a first and second station (10, 14) coupled via a bus (12) for transferring data and control signals, the bus (12) operating according to a protocol in which the first station (10) repeatedly sends requests (200, 210, 220, 230) for data to the second station, the second station (14) responding to each request (200, 210, 220, 230) by sending a message with a data item or sending a negative acknowledge signal (24), wherein the second station (14) comprises: (fig.2, col.1, line 61-col.2, line 17), (col.4, lines 1-28)

- an interruptable processor (15) for generating data items; (col.2, lines 10-40), wherein simultaneously requesting implies interruptable)
- a first in first out buffer (160) coupled between the processor (15) and the bus (12), for buffering data items for successive messages in a first in first out order, the processor (15) being programmed to start writing the data items to the buffer (160) in response to an interrupt (204, 234); (col.2, lines 1-17)
- a bus interface (162) arranged to handle the protocol, sending data items from the buffer (160) in the messages, the bus interface (162) sending an interrupt to the processor (15) in response to selected ones of the requests (200, 210, 220, 230), when the buffer is empty and no interrupts have yet been generated since the processor has written into the buffer (col.2, lines 18-40)

As per claims 3, 5, Chung discloses wherein the bus interface (160) is arranged generate an interrupt signal in response to an acknowledge signal from the first station (10) after sending the message. (col.2, lines 18-40)

As per claims 4 and 8, Chung discloses a bus interface integrated circuit, comprising:

- a connection for a bus (12); (col.4, lines 14-28)

- a first in first out buffer (160); (col.4, lines 14-28, wherein output queue implies FIFO)
- an interrupt output (164) for applying an interrupt to a processor (15); (col.4, lines 14-28)
- a controller (162) arranged to receive requests (200, 210, 220, 230) for data from the connection (12), and to respond to the requests (200, 210, 220, 230) by sending a message containing a data item from the buffer (160) if the buffer (160) is not empty, or by sending a negative acknowledge signal to the connection if the buffer is empty and to send an interrupt signal to the interrupt output (164) when the buffer is empty on receiving one of the requests (200, 210, 220, 230), but only if no interrupt has yet been sent since data has been written into the buffer (160). (col.2, lines 40-64)

As per claim 6, Chung discloses an integrated circuit arranged to be switchable between a plurality modes of operation, the integrated circuit generating the interrupt signal to the interrupt output when the buffer is empty on receiving one of the requests, but only if no interrupt has yet been sent since data has been written into the buffer in a first one of the modes, the integrated circuit generating an interrupt signal in response to an acknowledge signal from the bus after sending the message in a second one of the modes. (col.2, lines 40-64)

As per claim 7, Chung discloses an integrated circuit arranged to be switchable between a plurality modes of operation, the integrated circuit generating said

interrupt signal in response to each request for data when the buffer is empty in a first one of the modes, the integrated circuit generating the interrupt signal to the interrupt output when the buffer is empty on receiving one of the requests, but only if no interrupt has yet been sent since data has been written into the buffer in a second one of the modes. (col.2, lines 40-64)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung et al. (US Patent 5,931,936) in view of Nguyen (Pub No US20030028697)

Chung discloses all the limitations as above except a station for connection to a bus arranged to operate as a USB station. However, Nguyen discloses the USB system implementing a soft real-time event driven interrupt on a serial bus, polling client devices to service all interrupt requests. [0066]

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Nguyen's teaching into Chung's system so as not to waste USB bandwidth. [0008]

Conclusion


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (703)305-5384 or via e-mail addressed to [kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 8:30AM- 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (703) 305-4815 or via e-mail addressed to [mark.rinehart@uspto.gov]. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-5631.

Kim Huynh

May 1, 2004



Khanh Dang
Primary Examiner